



ADDENDUM TO THE WOOD AND CHARCOAL SPECIMEN ANALYSIS FOR THE MARKET STREET CHINATOWN ARCHAEOLOGY PROJECT

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1. INTRODUCTION

In October 2012, the Oxford Tree-Ring Laboratory was asked by the Market Street Chinatown Archaeology Project to analyze a large wood and charcoal assemblage. This collection, which had been excavated in the 1980s from the Market Street Chinatown site in San Jose, California, comprised hundreds of specimens spread over 35 of the site's 63 excavated features. A report entitled Wood and Charcoal Specimen Analysis for the Market Street Chinatown Archaeology Project was prepared and submitted in June 2013 to the Historical Archaeology Laboratory at Stanford University.

In early 2014, additional wood specimens were located within food-related botanical samples collected during the 1980s excavations. The Oxford Tree-Ring Laboratory agreed to analyze the additional specimens and to prepare the current report as an addendum to the June 2013 report.

2. ANALYSIS

The new specimens came from five separate features: a cistern (86-36/7), a wooden structure (86-36/13), a possible trash pit/possible wooden structure (86-36/17), and two trash pits (86-36/18 and 88-91/26). The only feature that was not included in the previous report is 88-91/26. Therefore the total number of excavated features containing wood and charcoal specimens from the entire Market Street Chinatown site has increased from 35 to 36.

Eleven new catalog numbers were analyzed, bringing the total of catalog numbers containing wood and charcoal specimens to 195 (see Table 1). All eleven were assigned individual wood recording sample numbers, bringing the total number of individual wood samples to 85 (see Table 2).

The specimens were made from several species of wood described in the previous report, namely redwood, Douglas fir, white oak, bamboo, and ebony. One new wood—cork—was encountered this time around, in the form of several cork stoppers and cork fragments. Cork has been used for centuries to make stoppers for glass and ceramic bottles and jars, stoppers for wooden casks, and fishing floats. Unlike most wood, cork is harvested from the bark of the tree rather than the interior timber. The majority comes from the bark of the cork oak (*Quercus suber*), a native of southwest Europe and northwest Africa. Smaller amounts are also obtained from the bark of the Chinese cork oak (*Quercus variabilis*), a related tree that is indigenous to eastern Asia.

Descriptions follow for each of the wooden artifacts, many of which were recognizable portable objects. Several of the specimens were composite wood and metal objects. A few of the

specimen bags contained wood or non-wood items that appeared to be unrelated to the main artifact, as detailed below.

3. INTERPRETATION OF INDIVIDUAL WOOD SPECIMENS

Chopsticks (Photographs 1 and 2)

Two possible chopsticks were identified in the new assemblage, one of bamboo and the other of redwood. The first was found in 86-36/7-915, a wood lined cistern/trash pit (OTR 075). It is a hollow cylinder of bamboo 1/5" in diameter. Both ends have been broken off, leaving a length of nearly 5 1/2". There are no signs of cutting or sawing, and although it was possibly used as a chopstick or dowel, the identification of its function is far from certain.

The second possible chopstick was found in 86-36/13-58, a wooden structure (OTR 077). Two other possible chopsticks were previously found in this same features (OTR 007 and OTR 008), but OTR 077 represents the best preserved example of a wooden chopstick in the Market Street Chinatown collection. It is a thin piece of worked redwood, square in section and tapering down to one end, with a width and thickness of 1/4" at its larger end. Although it is broken in two, the artifact is otherwise intact and measures 10 5/8" long. Its identification as a chopstick or hairstick is much more secure than that of OTR 075.

Knife handle (Photograph 3)

The wooden handle of an iron knife was found in 86-36/13-119, a wooden structure (OTR 078). Most of the knife has rusted away and only the tang, the bolster, and the base of the blade remain. The handle itself is 3 1/4" long and 1 1/3" in diameter. The flat blade and the small cut-out in the bolster where the base of the blade is inset identify the tool as a knife rather than a screwdriver, for instance, or a trowel. The handle is complete but split down the middle, revealing the highly corroded tang embedded within it. Inside the split is a bright yellow substance, possibly corrosion/deposition debris. Because of the intact nature of the knife handle, it was decided not to cut into the wood in order to identify the exact species used to construct the handle.

An unrelated composite metal object was also included in the bag for the catalog number; it appears to be composed of fused-together fragments of an iron bowl or bucket, a brass or steel wire, and an iron sheet. An iron encrustation that originally adhered to the handle was also present in the bag.

Knife scabbard (Photograph 4)

A composite object composed of a ferrous knife blade and one or possibly two pieces of wood was located in 86-36/13-12, a wooden structure (OTR 076). One fragment of wood encases one side of the knife, forming half of a wooden sheath or scabbard with the knife nestling inside it. Although the scabbard is incomplete, the remaining portion is 7 ¼" long and 1" wide. The scabbard has two bands of copper staining and one band of iron/copper staining on the outside, possibly decoration or a functional element that was used to hold the pieces together. Oxidizing iron from the knife has permeated the scabbard, making it very difficult to identify the wood species.

The other fragment of wood present in the bag is redwood. Although it is now separated from the scabbard and knife, it was at some point attached at an offset angle to the outside of the scabbard, suggesting that it was not part of the original object but instead adhered to it during deposition.

Tool handle (Photograph 5)

A tool handle made of an unidentified hardwood was found in 86-36/18-375, a wood-lined pit (OTR 084). The handle is intact but the ferrous tool blade has corroded away, surviving only as a large ferrous encrustation at the end of the handle; ferrous material also coats the body of the handle. The handle itself is approximately 4" long, with another inch of ferrous encrustation attached at the top, and is 1 1/5" in diameter. The blade appears to have been at least half an inch thick, much thicker than either OTR 076 or OTR 078, suggesting that it belonged to a chisel or another similarly substantial tool. As with OTR 078, it was decided not to cut into the intact artifact in order to identify the exact species used to construct the handle.

Tobacco pipe bowl (Photograph 6)

An ebony tobacco pipe bowl was found in 86-36/13-363, a wooden structure (OTR 081). It has a cylindrical shape with a flattened base. The bowl has a round hole drilled in its side for the insertion of the stem, which was a separate piece (possibly of wood) that is now missing. The opening at the top where the tobacco was placed connects to the hole for the stem, allowing smoke to pass through the bowl and into the stem. The pipe bowl is intact and measures 1 1/10" in length and 1 1/5" in diameter.

Barrel staves (Photograph 7)

Ten white oak barrel staves were found in 86-36/13-364, a wooden structure (OTR 082). Each stave is approximately 10" long by 2 ¼" wide by 1/3" thick. Together, they comprise a small

barrel, probably designed to hold a gallon of liquid. In the nineteenth century, barrels were extremely common storage containers used to hold liquids and dry goods of all kinds. White oak was the preferred wood for making barrels used for long-term storage or transportation of liquids.

To construct the barrel, white oak timber was split into blanks, and the blanks were shaped with a draw plane to form individual staves. The rectangular staves are all roughly the same size and are slightly curved to produce the bulge in the barrel that allows it to be rolled easily. All show evidence of a croze, or a groove that allows the flat heads or ends of the barrel to slot into the staves, on both the top and the bottom. Each stave also has a butt joint on either side to allow them to be held tightly together. The staves would have been held in place with encircling metal hoops; all show evidence of ferrous corrosion—the remains of the iron hoops—on their exterior.

Cork stoppers (Photographs 8 and 9)

Two of the catalog numbers contained identifiable cork stoppers or fragments of cork that were presumably originally stoppers. The first set of corks, OTR 080, was found in 86-36/13-145, a wooden structure. It included six cork stoppers and five cork fragments. Two of the former were worn but relatively complete bottle stoppers (one is 9/10" long x 7/10" in diameter and the other, which is partially charred or rotted, is 3/4" long and 1/2" in diameter). The other four stoppers are incomplete but retain a measurable diameter, all of which are markedly larger than the bottle stoppers, indicating that they were probably used as jar or cask stoppers. The five cork fragments contained no original surfaces, and were joined by one unidentified and deteriorated fragment of wood, possibly a cork bottle stopper that has been crushed. Included within the catalog number were three small redwood offcuts and five small Douglas fir offcuts, which appear to have been misidentified as corks.

The other set of corks, OTR 083, was found in 86-36/17-78, a possible wood-lined trash pit/possible wooden structure. They were four fragments of cork, only one of which retained enough of its original surface to allow for an estimation of its diameter, which indicates that it was a bottle stopper.

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Unidentified objects (Photographs 10 and 11)

Two of the objects remain unidentified. One was found in 88-91/26-412, an unlined trash pit (OTR 085). It is a shaped wood timber, rectangular in cross-section and tapering toward one end. It is made from an unidentified softwood, is pierced by one ferrous nail, and has a small amount of what appears to be residue from black paint on one face and one edge. It retains portions of both edges and both faces, making it possible to identify the approximate original width (1") and thickness (3/4") of the timber at the larger end. Although it somewhat resembles a rectangular

chair leg, the fact that the pointed tip of the nail protrudes through the timber appears to preclude this use.

The other unidentified object was found in 86-36/13-126, a wooden structure (OTR 079). It is composed of two fragments of very deteriorated wood. The wood has been hollowed out and is circular in cross-section. The fragments retain no original surfaces and the species remains unidentified. It is unclear if the fragments are remnants of a shaped wood object or if they are degraded natural wood specimens.

Table 1: Catalog numbers containing wood and charcoal specimens (addendum)

Catalog #	Excavation level & ARS associations	Feature description	1887 fire assoc.	Wood (g)	Charred wood (g)	Charcoal (g)
86-36/7-915		Wood-lined cistern/trash pit		2	0	0
86-36/13-12		Wooden structure		86	0	0
86-36/13-58		Wooden structure		7	0	0
86-36/13-119		Wooden structure		55	0	0
86-36/13-126		Wooden structure		4	0	0
86-36/13-145		Wooden structure		12	1 (poss.)	0
86-36/13-363		Wooden structure		14	0	0
86-36/13-364		Wooden structure		857	0	0
86-36/17-78		Wood-lined trash pit/possible wooden structure		3	0	0
86-36/18-375		Wood-lined pit		75	0	0
88-91/26-412		Unlined trash pit		17	0	0

Table 2: Register of individual wood samples (addendum)

OTR number	Catalog number	Species ID	Structural or non-structural	Type	Further analysis
075	86-36/7-915	Bamboo	Non-structural	Possible chopstick/dowel	
076	86-36/13-12	Unidentified	Non-structural	Knife scabbard	
077	86-36/13-58	Redwood	Non-structural	Chopstick	
078	86-36/13-119	Unidentified	Non-structural	Knife handle	
079	86-36/13-126	Unidentified	Non-structural/natural	Unidentified	
080	86-36/13-145	Various	Non-structural	Stoppers/offcuts	
081	86-36/13-363	Ebony	Non-structural	Pipe bowl	
082	86-36/13-364	White oak	Non-structural	Barrel staves	
083	86-36/17-78	Cork	Non-structural	Possible stoppers	
084	86-36/18-375	Unidentified hardwood	Non-structural	Tool handle	
085	88-91/26-412	Unidentified softwood	Non-structural	Worked timber	



Photograph 1. Possible bamboo chopstick or dowel from 86-36/7-915 (OTR 075)



Photograph 2. Redwood chopstick from 86-36/13-58 (OTR 077)



Photograph 3. Knife handle from 86-36/13-119 (OTR 078)



Photograph 4. Knife scabbard from 86-36/13-12, showing copper staining (OTR 076)



Photograph 5. Hardwood tool handle from 86-36/18-375 (OTR 084)



Photograph 6. Ebony tobacco pipe bowl from 86-36/13-363, side view (OTR 081)



Photograph 7. White oak barrel staves from 86-36/13-364 (OTR 082)



Photograph 8. Cork stoppers and cork fragments from 86-36/13-145 (OTR 080)



Photograph 9. Cork stopper and cork fragments from 86-36/17-78 (OTR 083)



Photograph 10. Unidentified softwood object from 88-91/26-412 (OTR 085)



Photograph 11. Unidentified object from 86-36/13-126 (OTR 079)